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REVISION OF THE SOUTHEASTERN ASIAN SAWFLY GENUS *BUSARBIA* CAMERON (HYMENOPTERA: TENTHREDINIDAE)

MALKIAT S. SAINI AND DAVID R. SMITH

(MSS) Department of Zoology, Punjabi University, Patiala 147002, India (e-mail: saini20@hotmail.com); (DRS) Systematic Entomology Laboratory, PSI, Agricultural Research Service, U.S. Department of Agriculture, % National Museum of Natural History, Smithsonian Institution, P.O. Box 37012, MRC 168, Washington, DC 20013-7012, U.S.A. (e-mail: dsmith@sel.barc.usda.gov)

Abstract.—Six species of *Busarbia* Cameron, a genus of the subfamily Selandriinae restricted to southeastern Asia, are known: *B. viridipes* Cameron, ***B. shinoharai*, n. sp.**, ***B. okutanii*, n. sp.**, and ***B. santokhi*, n. sp.**, from India; *B. formosana* (Rohwer) from Taiwan, Myanmar, and India; and *B. isshikii* (Takeuchi) from Taiwan. *Busarbia formosana* is recorded from India for the first time. An identification key is provided, and each species is described and illustrated.

Key Words: sawflies, Symphyta, Selandriinae, ferns

Busarbia was described by Cameron (1899) from Assam (now Megahalaya), Khasia Hills, India, and included a single species, *B. viridipes* Cameron. In 1902, Cameron added *B. albipes* from Shimla (Himalchal Pradesh). Malaise (1944) reviewed this genus from Myanmar and India and also included *Busarbia formosana* (Rohwer 1916) and *Busarbia isshikii* (Takeuchi 1928). Since Malaise (1944), the genus has been only mentioned in the literature. Togashi (1990, figs. 15–19) gave some additional records for *B. isshikii* from Taiwan, briefly described the species, and illustrated the wings, top and front view of the head, sheath, and female lancet and Malaise (1963) included the genus in his key to world genera of Selandriinae.

A number of specimens have been collected from India during surveys by the senior author. We treat six species, three of which are new, and one which is recorded from India for the first time. Food plants are not known, but most related Selandriinae feed on ferns and Malaise (1944) speculated that ". . . without doubt the larvae feed on ferns, as the adults, like those of the genus *Nesoselandria* Rohwer, are always found on or near ferns." Knowledge of fern-feeding sawflies is important because of the interest in biological control of invasive ferns, especially the Old World climbing fern of the genus *Lygodium* in the United States.

Terminology follows Malaise (1963) and Ross (1937, 1945). All holotypes are deposited in the National Pusa Collections, Indian Agricultural Research Institute (IARI), New Delhi.

Abbreviations used are as follows: EL = eye length; IATS = inner apical tibial spur; ICD = intercenchral distance; IDMO = interocular distance at level of median ocellus; ITD = intertegular distance; LID = lower interocular distance; MB = hind basitarsus; OATS = outer apical tibial spur; OCL = ocellar-occipital distance; OOL = ocular-ocellar distance; POL = postocellar distance.

Busarbia Cameron

Busarbia Cameron 1899: 37. Type species: *Busarbia viridipes* Cameron, by monotypy.—Malaise 1944: 17, 19 (genus defined, key to species).—Malaise 1963: 174 (in key).

Description.—Antenna long, slender; filiform; third antennal segment subequal in length to or slightly shorter than 4th segment; pedicel twice as long as its breadth at apex. Inner margins of eyes straight and subparallel, slightly more converging below in males. Malar space distinct. Clypeus with indistinct and blunt carina along emarginated anterior margin; this margin sometimes with a narrow, depressed and acute edge, if acute edge wanting, margin appears almost incrassate. Mandibles roundly bent, much less than at a right angle; without a deep pit on outer surface at base. Frontal area surrounded by acute carina and lateral carina extending from it almost to each eye (Figs. 1–4). Epicnemiun distinct, separated from mesepisternum by deep furrow. Forewing with veins M and 1m-cu divergent, not parallel; with 2 radial and 4 cubital cells; anal cell without crossvein. Hind wing with 2 closed middle cells; anal cell petiolate. Supara-antennal pits poorly developed and supra-antennal tubercles absent. Tarsal claws with long subapical tooth, shorter than outer tooth; basal lobe absent. Color black, white with a greenish tinge when alive (whitish yellow in dried specimens) on clypeus, labrum, mandibles, palpi, scape, upper pronotal margin, tegula, postspiracular sclerite, and triangular spot on posterior mesepisternum; legs except apices of tarsi, and most of underside of abdomen except for black apical 3 or 4 segments.

Remarks.—*Busarbia, Abusarbia* Malaise, and *Busarbidea* Rohwer form a group of genera in the Selandriiae that share the sharp carinae on the frons (as in Figs. 1–4). *Abusarbia* is distinguished by the tarsal claws which have a single tooth and a large, acute basal lobe, and *Busarbidea* by the presence of an anal crossvein in the forewing.

Other genera with which *Busarbia* may be confused are *Anapeptamena* Konow, *Arbusia* Malaise, and *Apeptamena* Malaise; however, these genera lack the sharp ridges on the frontal area and have the inner margins of the eyes distinctly converging below. *Busarbia* keys to near these two genera in Malaise (1963). For a discussion of *Anapeptamena,* see Saini et al. (2003).

Malaise (1944) gave a key to three species of *Busarbia, B. isshikii, B. viridipes* Cameron, and *B. formosana.* He considered *B. albipes* Cameron as a color form of *B. viridipes.* These three species, plus the three new ones described here, are the only species of *Busarbia* that we are aware of.

KEY TO SPECIES

1. Antennal segment 3 subequal in length to 4; lateral margins of mesoprescutum, supraclypeal area to around median fovea, and spot on inner orbits whitish (from Takeuchi 1928 and Malaise 1944) . . . . *isshikii* (Takeuchi)

– Antennal segment 3 shorter than 4 (except equal only in *shinoharai*); mesoprescutum, supraclypeal area, and inner orbits black 2

2. Scape black; head rugose with dense confluent punctures . . . . *shinoharai,* n. sp.

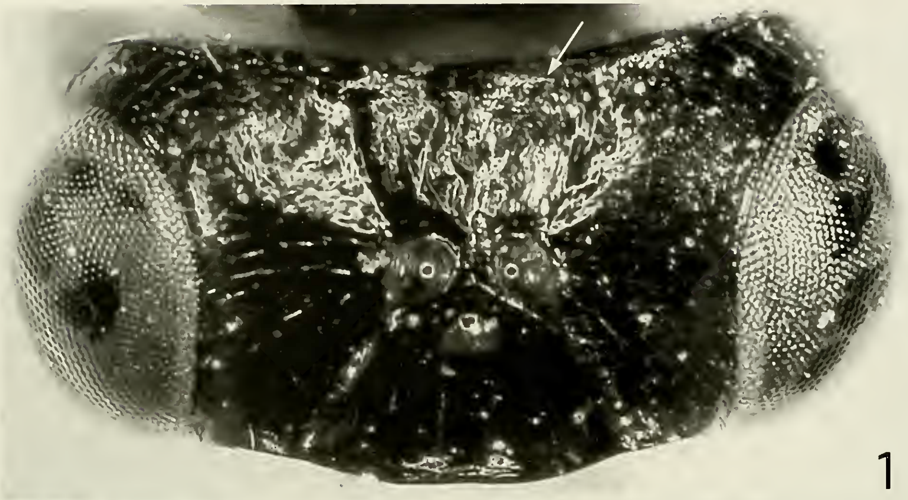
– Scape yellow or fuscus; head smooth and almost impunctate, punctures scattered and not confluent (Figs. 1–4) 3

3. Hind margin of head distinctly carinate (Figs. 1–4); medial carina of postcellar area almost reaching hind margin of head 4

– Hind margin of head rounded, not carinate; medial carina of postocellar area, if present, confined only to anterior half 5

4. Malar space more than half diameter of front ocellus; tarsal claw with long inner tooth, nearly as long as outer tooth (Fig. 14); lower interocular distance greater than eye length. LID:IDMO:EL = 1.0:1.1:0.8; postocellar area slightly broader than long as 5:4; hind ocelli closer together and farther from hind margin of head, OOL:POL:OCL = 1.0:0.3:0.8 (Figs. 1–2) . . . . *formosana* (Rohwer)

– Malar space less than half diameter of front ocellus; tarsal claw with small inner tooth, much shorter than outer tooth (Fig. 11); lower interocular distance subequal to eye length, LID:IDMO:EL = 1.0:1.2:1.0; postocellar area distinctly broader than long as 7:4; hind ocelli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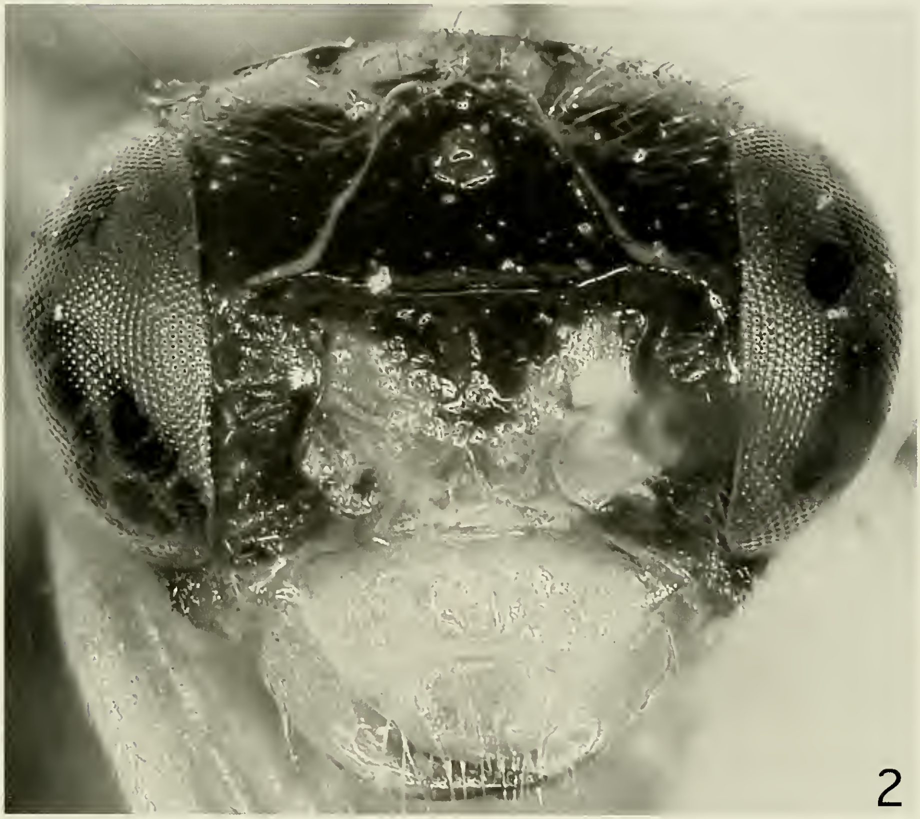
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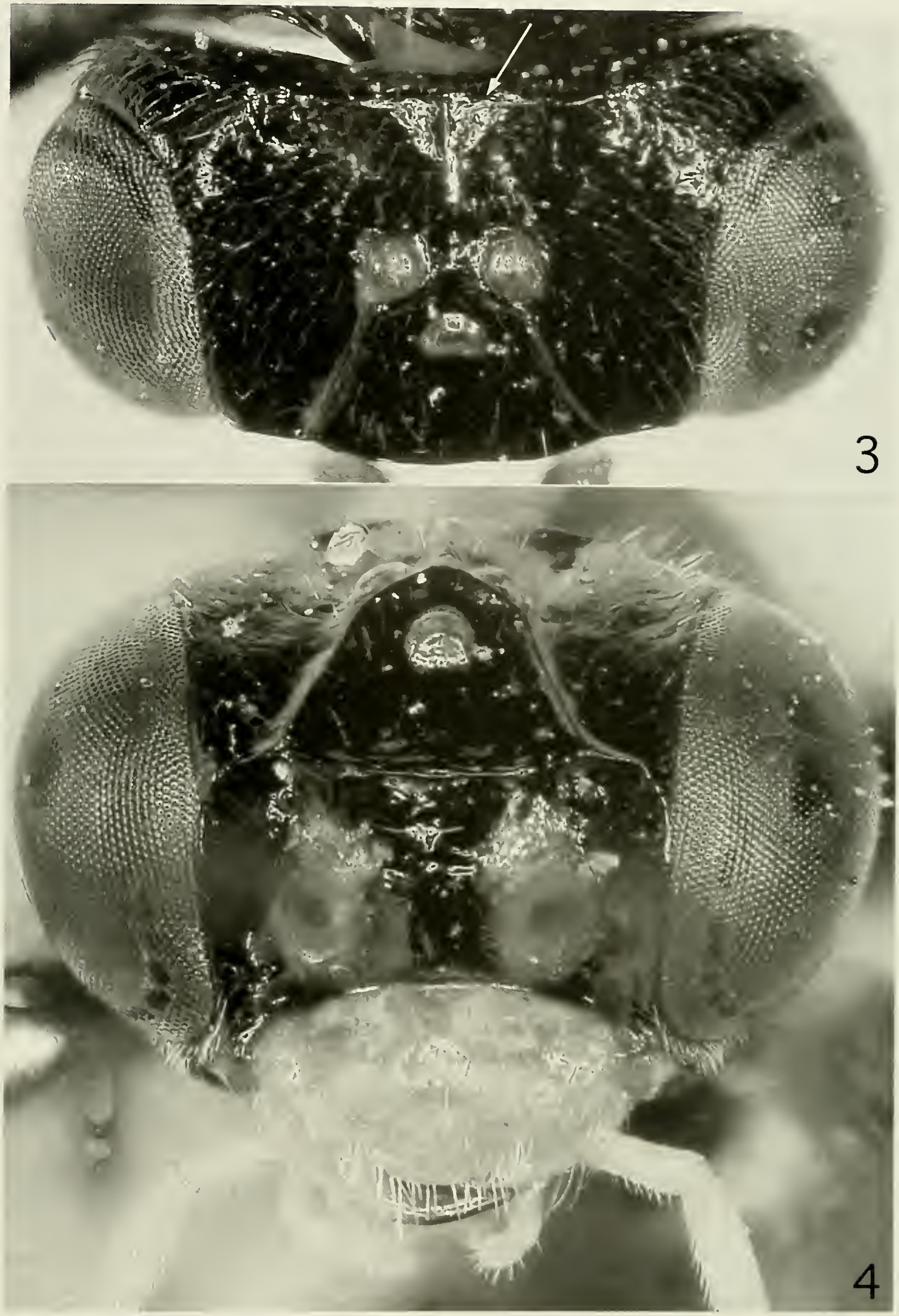
Figs. 1–2. *Busarbia formosana* head. 1, Dorsal view. 2, Front view. Arrow indicates occipital carina.

farther apart and closer to hind margin of head, OOL:POL:OCL = 1.0:0.4:0.9 (Figs. 3–4) . . . . *okutanii,* n. sp.

5. Abdomen pale yellow to light brownish below except at apex; OOL:POL:OCL = 1.0:0.4:1.1; malar space 0.6× diameter of front ocellus . . . . *santokhi,* n. sp.

– Abdomen black; OOL:POL:OCL = 1.0:0.3: 1.0; malar space 0.4× diameter of front ocellus . . . . *viridipes* Cameron



Figs. 3–4. *Busarbia okutanii* head. 3, Dorsal view. 4, Front view. Arrow indicates occipital carina.

Busarbia formosana (Rohwer)
(Figs. 1, 2, 9, 14, 18)

Anapeptamena formosana Rohwer 1916: 100–101.—Forsius 1932: 53 (in key).—Takeuchi 1941: 270 (in key; Taiwan records).—Oehlke and Wudowenz 1984: 381 (types).

Busarbia formosana: Malaise 1944: 20.

Female.— *Color:* Black with following pale whitish: clypeus, labrum, mandible except apex, scape, supraclypeal area continuous with spots on supra-antennal tubercles, posterodorsal angle of pronotum, tegula, postspiracular sclerite, subtriangular spot on ventral half of mesepisternum, sterna 1–6, and legs except somewhat rufous apical tarsal segments. Wings hyaline; costa, stigma, and veins light brown to black.

Structure: Average length, 5.5 mm. Antennal length 2.9× head width; scape slightly longer than broad and almost equal to pedicel; pedicel length 2× apical width; segment 3 shorter than 4, as 5:6. Clypeus subconvex, roundly emarginated for one-quarter its medial length (Fig. 9). Labrum broader than long as 2:1, with rounded anterior margin. Malar space 0.6× diameter of front ocellus. OOL:POL:OCL = 1.0:0.3:0.8. Supra-antennal pits only indicated. Supra-antennal tubercles slightly raised and sloping posteriorly. Postocellar furrow distinct, replaced with carina; circumocellar furrow indistinct. Lateral furrows deep, distinct, diverging backwards, and almost reaching hind margin of head. Postocellar area distinctly broader than long, as 5:4, hind margin of head distinctly carinate and postocellar area with medial carina reaching hind margin of head. Lower interocular distance greater than eye length, LID:IDMO:EL = 1.0:1.1:0.9. ITD:ICD = 1.0:0.3. Mesepisternum obtusely raised without carina or acute apex. Subapical tooth of tarsal claws (Fig. 14) slightly shorter than apical tooth. Hind basitarsus longer than following tarsal segments combined, as 6:5. IATS:MB:OATS = 1.0:3.0:0.9. Lancet with 5 serrulae (Fig. 18).

Structure and pubescence: Head smooth, shining; thorax shining, almost impunctate; punctures on mesoscutellum anterior to its appendage confined to a single row. Abdomen cross striated. Brownish-yellow pubescence almost negligible.

Male.—Length, 4.0 mm. Similar to female except for black sternites (based on Rohwer 1916).

Types.—Described from 2 females (one type) and 1 male collected Oct. 1911, Suisharyo, Formosa. Holotype and male allotype in the Deutsches Entomologisches Institut, Müncheberg; female paratype in the National Museum of Natural History, Smithsonian Institution, Washington, DC (USNM) (Oehlke and Wudowenz 1984).

Specimens examined.—INDIA: Arunachal Pradesh, Bomdila, 2,800 m, 26.5.1993, M.S. Saini (1 ♀); Himachal Pradesh, Kalatop, 2,400 m, 25–28.7.1982, M. S. Saini (13 ♀), 6–9.8.1982 (23 ♀), 27.8.1982 (3 ♀); Uttar Pradesh, Hanuman Chatti, 2,300 m, 5.6.1983, M.S. Saini (6 ♀); Kilbury, 2,425 m, 22.6.1993, M. S. Saini (2 ♀); Mandal, 2,200 m, 21.6.1985, M.S. Saini (2 ♀); West Bengal, Darjeeling, 2,286 m, 26.5.1989, M. S. Saini (1 ♀), 9.5.1983 (1 ♀). TAIWAN: Suisharyo, Formosa, X 11, Sauter (*Anapeptamena formosana* Rohwer, paratype ♀, USNM).

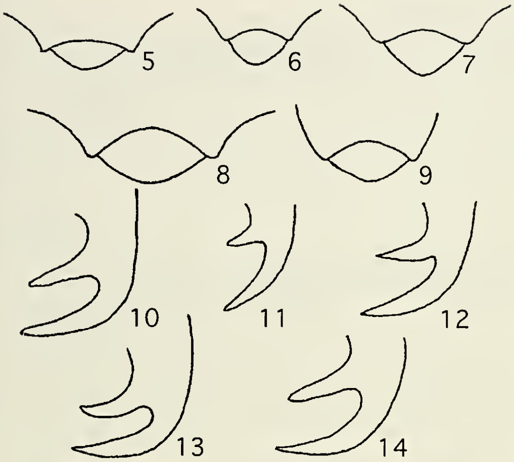
Distribution.—Myanmar (Kambaiti at 2,000 m; Taunggyi at 1,500 m) (Malaise 1944); Taiwan; India (Arunachal Pradesh, Himachal Pradesh, Uttar Pradesh, West Bengal).

Variation.—Tergites 2–5 are sometimes fulvous above, and the lateral sides of antennal segments 6–9 may be pale.

Remarks.—The carinate hind margin of the head and coloration places this species close to *B. okutanii,* but it can be separated by characters given in the key and as discussed under *B. okutanii.*

Busarbia isshikii (Takeuchi)

Anapeptamena isshikii Takeuchi 1928: 39.—Takeuchi 1941: 270 (in key).



Figs. 5–14. Clypeus and labrum and tarsal claws. 5–9, Clypeus and labrum. 5, *Busarbia shinoharai.* 6, *B. okutanii.* 7, *B. santokhi.* 8, *B. viridipes.* 9, *B. formosana.* 10–14, Tarsal claws. 10, *B. shinoharai.* 11, *B. okutanii.* 12, *B. santokhi.* 13, *B. viridipes.* 14, *B. formosana.*

Busarbia isshikii: Malaise 1944: 19.—Togashi 1990: 180, figs. 15–19.

Remarks.—We have not seen specimens of this species. According to the original description and Malaise (1944), it is separated from the other species of *Busarbia* by antennal segment 3 subequal in length to 4 and by the whitish markings on the lateral margins of the mesoprescutum, supraclypeal area to around the median fovea, and spot on the inner orbits. Other species of *Busarbia* have the third antennal segment shorter than the fourth (execpt *B. shinoharai*) and the above parts black.

Takeuchi described this species from one female from "Shinsuiye, Formosa." Togashi (1990) gave a few additional characters, new records from Taiwan, and illustrated the dorsal and frontal views of the head, wings, sawsheath, and lancet.

Busarbia okutanii Saini and Smith, new species

(Figs. 3–4, 6, 11, 19–20, 23)

Female.—*Color:* Body black, with clypeus, labrum, dorsal pronotal margin, tegula, postspiracular sclerite, triangular spot on posterior portion of mesopleuron, sternites 1–5, and legs except apices of tarsi whitish; scape fuscous. Wings hyaline; costa, stigma, and veins black.

Structure: Average length, 6.5 mm. Antennal length 3× head width; scape longer than pedicel as 4:3; scape and pedicel lengths each 2× their apical widths; segment 3 shorter than 4, as 4:5. Clypeus subconvex, its extreme anterior margin arcuately emarginated up to $\frac{1}{5}$ its medial length, with blunt lateral lobes (Fig. 6). Labrum broader than long, as 2:1, with rounded anterior margin. Malar space less than half diameter of front ocellus. OOL:POL:OCL = 1.0:0.4:0.9. Supra-antennal pits distinct and connected to antennal sockets by a very fine furrow. Supra-antennal tubercles indicated and continuous with similar frontal ridges. Circum- and interocellar furrows distinct; postocellar furrow indistinct. Lateral furrows deep, distinct, diverging backwards and reaching posterior margin of head. Postocellar area distinctly broader than long, as 7:4; hind margin of head distinctly carinate, and middle longitudinal carina of postocellar area reaching hind margin of head. Inner margins of eyes subparallel in middle. Lower interocular distance subequal to eye length, LID:IDMO:EL = 1.0:1.2:1.0. ITD:ICD = 1.0:0.3. Mesepisternum obtusely raised without carina or acute apex. Subapical tooth of tarsal claw (Fig 11) shorter than apical tooth. Hind basitarsis longer than following tarsal joints combined, as 5:4. IATS:MB:OATS = 1.0:3.3:0.9. Lancet with 5 serrulae (Fig. 19).

Sculpture and pubescence: Head and thorax smooth, shining and impunctate except posterior slope of mesoscutellum with row of distinct punctures. Abdomen impunctate, subshining. Head and thorax covered with minute golden-yellow pubescence.

Male.—Average length, 4.0 mm. Similar to female except malar space 0.3× diameter of front ocellus; antennal segment 3 shorter than 4, as 6:7, and scape and pedicel pale whitish. Genitalia: Penis valve (Fig. 20) with valviceps narrow at base and broadening to truncate apex, with row of stout spines on ventral margin; genital capsule (Fig. 23) similar to *B. viridipes.*

Holotype.—Female, Arunachal Pradesh, Bomdila, 2,800 m, 31.5.1989, M.S. Saini.

Paratypes.—Same data as holotype (2 ♀); Nagaland, Satakha, 1,600 m, 15.5.1993, M.S. Saini (1 ♂) (1 ♀, 1 ♂ at Punjabi University; 1 ♀ at USNM).

Distribution.—India (Arunachal Pradesh; Nagaland).

Etymology.—The species name is in honor of Dr. Teichi Okutani of Japan, a distinguished worker in the field of sawfly taxonomy and biology.

Remarks.—No variation was observed. The carinate hind margin of the head is shared with *B. formosana. Busarbia okutanii* is separated from *B. formosana* by the short malar space less than half the diameter of the front ocellus, lower interocular distance subequal to the eye length, small inner tooth of the tarsal claw, and broad postocellar area.

Busarbia santokhi Saini and Smith, new species

(Figs. 7, 12, 17, 21, 24)

Female.—*Color:* Black, with following pale whitish: clypeus, labrum, mandible except apex, scape, upper pronotal margin, tegula, postspiracular sclerite, spot on posterior portion of mesopleuron, sternites 1–6, and legs except infuscated tarsal claws. Wings hyaline; costa, stigma, and veins black.

Structure: Average length, 6.0 mm. Antennal length 2.5× head width; scape and pedicel almost equal in length, each shorter than 2× their apical widths; segment 3 shorter than 4, as 8:9. Clypeus with anterior margin subconvex, roundly emarginate for ¼ its medial length, with blunt lateral lobes (Fig. 7). Labrum broader than long as 5:2, with rounded anterior margin. Malar space 0.6× diameter of front ocellus. OOL:POL:OCL = 1.0:0.4:1.1. Supra-antennal pits indistinct. Supra-antennal tubercles only indicated and continuous with similar frontal ridges. Circum-, inter- and postocellar furrows distinct. Lateral furrows deep, distinct, diverging backwards, and ending just before hind margin of head. Postocellar area subconvex, as long as broad at its maximum width; hind margin of head rounded, not carinate. Lower interocular distance greater than eye length, LID:IDMO:EL = 1.0:1.1:0.9. ITD:ICD = 1.0:0.3. Subapical tooth of tarsal claws shorter than apical tooth (Fig. 12). Hind basitarsus longer than following tarsal joints combined, as 7:6. IATS:MB:OATS = 1.0:3.0:0.9. Lancet with 5 serrulae (Fig. 17).

Sculpture and pubescence: Head and thorax smooth, shining, impunctate, except posterior slope of mesoscutellum with a row of distinct isolated punctures. Abdomen impunctate, subshining. Body covered with golden-yellow pubescence.

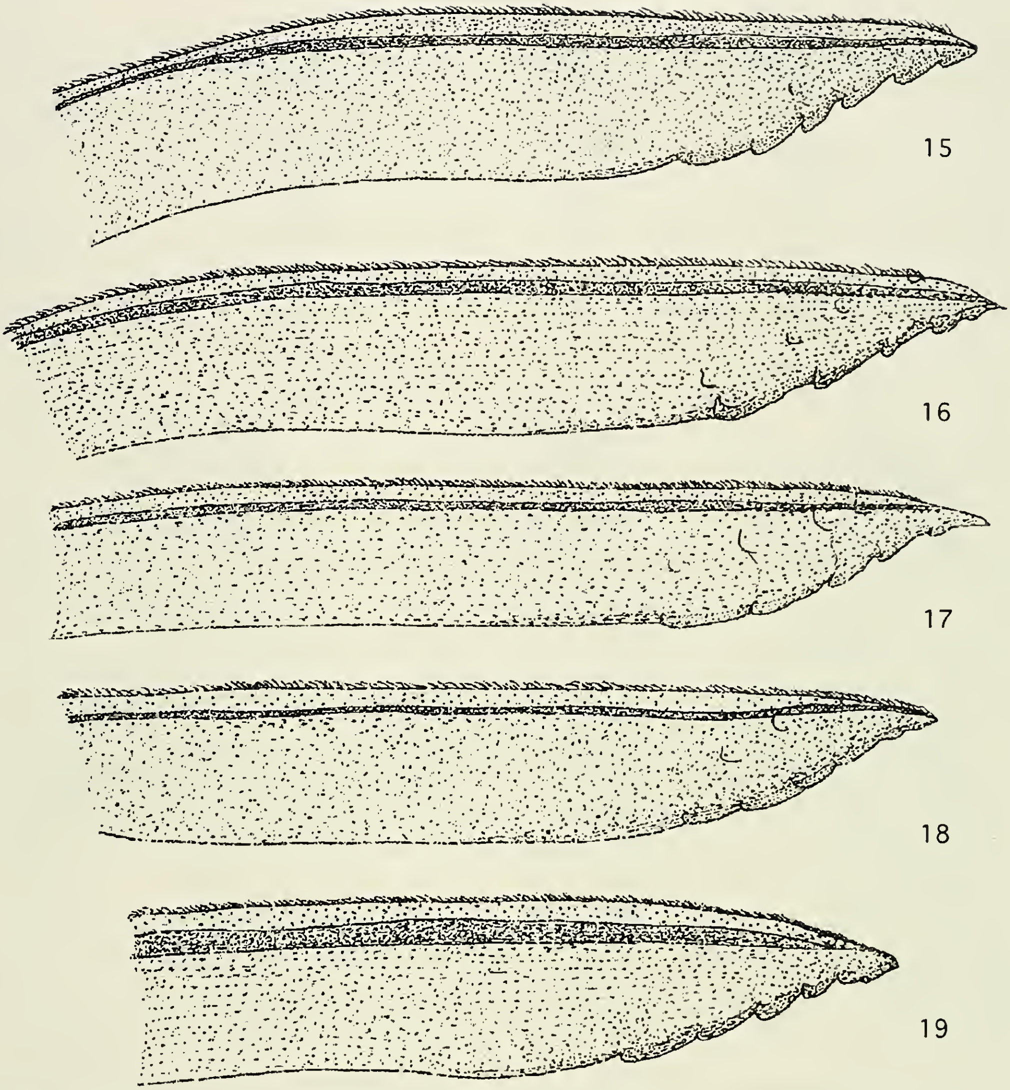
Male.—Average length, 5.0 mm. Similar to female except antennal length 3.0× head width, pedicel and lateral sides of third segment pale whitish; tergites 2–5 light brownish; all sternites black; ITD:ICD = 1.0:0.4. Genitalia: Penis valve (Fig. 21) with valviceps somewhat rectangular and of equal width, apex truncate, without spines on ventral margin; genital capsule (Fig. 24), with parapenis narrow and slender, separated from gonostipes by circular notch.

Holotype.—Female, West Bengal, Darjeeling, 2,300 m, 9.5.1993, M. S. Saini (IARI).

Paratypes.—Same data as holotype (3 ♀); same except 8.5.1983 (1 ♂); Sikkim, Gangtok, 1,700 m, 18–20.9.1993, M. S. Saini (2 ♀); Himachal Pradesh, Manali, 2,400 m, 24.8.1981, M.S. Saini (1 ♂); Uttar Pradesh, Chakrata, 2,300 m, 27.5.1983, M.S. Saini (1 ♂) (at Punjabi University; 1 ♀, 1 ♂ in USNM).

Distribution.—India (Himachal Pradesh, Sikkim, West Bengal, Uttar Pradesh).

Etymology.—Named in honor of Dr. Santokh Singh, School of Entomology, St. John's College, Agra, a reputed Indian entomologist.



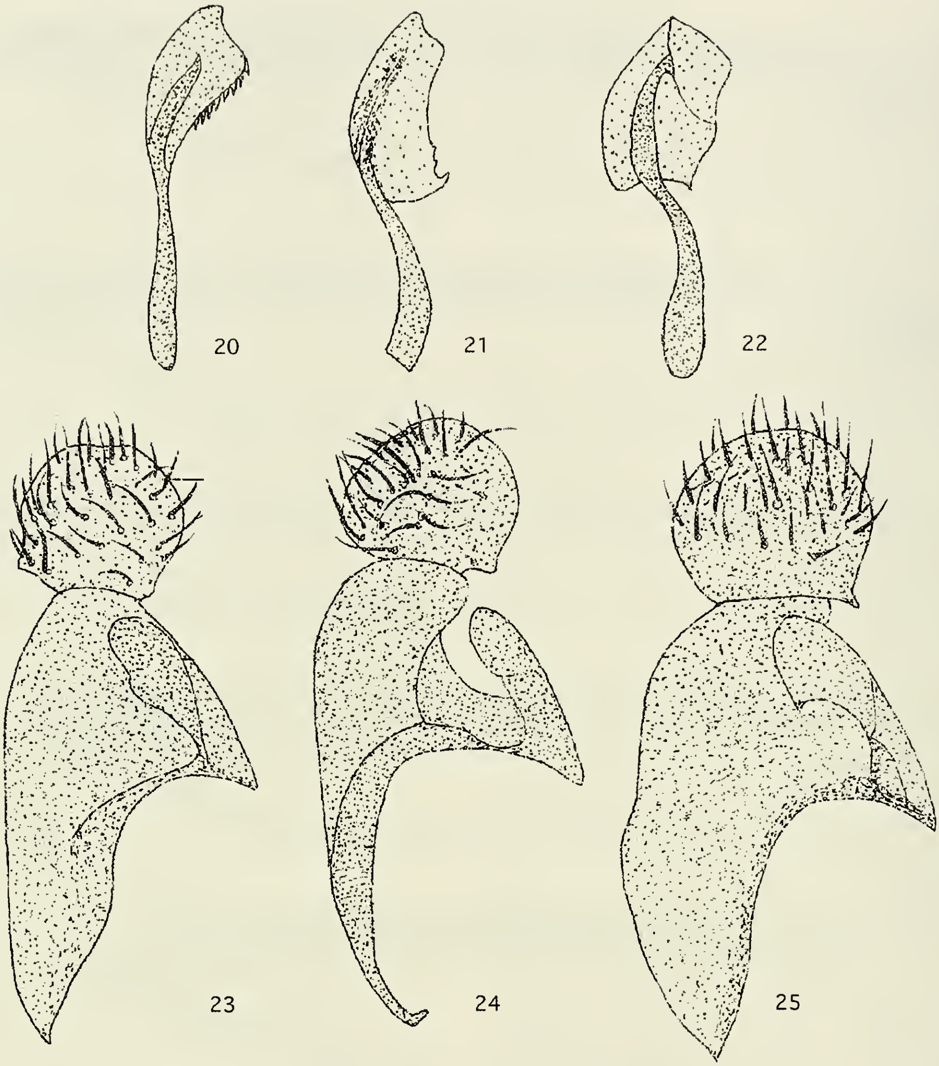
Figs. 15–19. Female lancets. 15, *Busarbia shinoharia.* 16, *B. viridipes.* 17, *B. santokhi.* 18. *B. formosana.* 19, *B. okutanii.*

Remarks.— *Busarbia santokhi* and *B. viridipes* both have a yellow scape, head smooth and almost impunctate, and the hind margin of the head rounded, not carinate. *Busarbia santokhi* is separated from *B. viridipes* by the pale yellow abdominal venter and broader malar space which is a little more than half diameter of the front ocellus. *Busarbia viridipes* has a black abdomen and malar space less than half the diameter of the front ocellus.

Busarbia shinoharai Saini and Smith, new species

(Figs. 5, 10, 15)

Female.—*Color:* Body black with following pale whitish: clypeus, labrum, mandible at base; upper pronotal margin, tegula, postspiracular sclerite, triangular spot on mesopleuron behind; sternites 1–6, and legs except lightly infuscated tarsal segments of hind leg. Wings hyaline; costa, stigma, and veins black.



Figs. 20–25. Male genitalia. 20–23, Penis valves. 20, *Busarbia okutanii.* 21, *B. santokhi.* 22, *B. viridipes.* 23–25, Genital capsule, ventral view of left half. 23, *B. okutanii.* 24, *B. santokhi.* 25, *B. viridipes.*

Structure: Length, 5.5 mm. Antennal length 2.4× head width; scape and pedicel almost equal in length, each longer than their apical widths as 3:2; segments 3 and 4 almost equal in length. Clypeus subconvex with anterior margin arcuately emarginate for ¼ its medial length (Fig. 5). Labrum broader than long as 2:1 with rounded anterior margin. Malar space 0.7× diameter of front ocellus. OOL:POL:OCL = 1.0:0.3:1.0. Supra-antennal pits only indicated. Supra-antennal tubercles moderately raised and continuous with similar frontal ridges. Circum- and postocellar furrows distinct; interocellar furrow indistinct. Lateral furrows distinct, straight and almost reaching hind margin of head. Postocellar area quadrate; hind margin of head rounded. Lower interocular distance greater than eye length, LID:IDMO:EL = 1.0:1.1:0.7. ITD:ICD = 1.0:0.3. Mesepisternum obtusely raised without carina or acute apex. Subapical tooth of tarsal claws (Fig. 10) slightly shorter than apical tooth. Hind basitarsus almost equal to following tarsal segments combined. IATS:MB:OATS = 1.1:3.5:0.9. Lancet with 6 serrulae (Fig. 15).

Sculpture and pubescence: Head rugose with dense confluent punctures. Thorax almost impunctate except posterior slope of mesoscutellum with a row of a few large punctures. Head and thorax shining, abdomen impuncate, subshining. Pubescence golden yellow.

Male.—Unknown.

Holotype.—Female, Arunachal Pradesh, Dirang, 1,500 m, 10.5.1992, M. S. Saini (IARI).

Distribution.—India (Arunachal Pradesh).

Etymology.—Named in honor of Dr. Akihiko Shinohara, National Science Museum (Natural History), Tokyo, a specialist on the family Pamphiliidae.

Remarks.—The black scape and rugose head with confluent punctures separate this species from other species of *Busarbia*. This and *B. isshikii* are the only species of *Busarbia* in which the third and fouth antennal segments are subequal in length; in other species the third antennal segment is shorter than the fourth.

Busarbia viridipes Cameron
(Figs. 9, 13, 16, 22, 25)

Busarbia viridipes Cameron 1899: 38–39.—Malaise 1944: 20

Anapeptamena viridipes: Konow 1905: 74.—Forsius 1932: 52 (in key).

Busarbia albipes Cameron 1902: 445.

Busarbia viridipes albipes: Malaise 1944: 20 (color form).

Anapeptamena cameroni Konow 1905: 74 (new name for *Busarbia albipes* Cameron, preoccupied in *Anapeptamena* by *Anapeptamena albipes* Konow 1898).—Forsius 1932: 53 (in key).

Female.—*Color:* Black with following pale whitish: clypeus, labrum, mandible except apex, scape, upper pronotal margin, tegula, postspiracular sclerite, subtriangular spot on lower half of mesepisternum, and legs except tips of fore- and mid tarsal segments and last 3 hind tarsal segments which are fuscous. Wings hyaline; costa, stigma, and veins black.

Structure: Average length, 6.3 mm. Antennal length 2.5× head width; scape longer than broad as 2.0:1.5; scape and pedicel equal in length, pedicel 2× longer than its apical width; segment 3 shorter than 4 as 8:9. Clypeus subconvex, roundly emarginated for ⅓ its medial length (Fig. 9), with anterior margin not depressed. Labrum broader than long as 3:2, with round anterior margin. Malar space 0.4× diameter of front ocellus. OOL:POL:OCL = 1.0:0.3:1.0. Supra-antennal pits almost distinct and connected to antennal sockets by very fine furrows. Supra-antennal tubercles moderately raised and sloping posteriorly. Circum-, inter-, and postocellar furrows distinct. Lateral furrows distinct, diverging posteriorly and abruptly ending just before hind margin of head. Postocellar area subquadrate, slightly broader than long as 9:8; hind margin of head rounded. Lower interocular distance greater than eye length, LID:IDMO:EL = 1.0:1.1:0.8. ITD:ICD = 1.0:0.4. Mesepisternum obtusely raised with blunt carina. Subapical tooth of tarsal claws (Fig. 13) slightly shorter than apical tooth. Hind basitarsus slightly longer than following tarsal segments combined, as 8:7. IATS:MB:OATS = 1.0:1.2:0.8. Lancet with 4 serrulae (Fig. 16).

Sculpture and pubescence: Head and thorax smooth and shining, with minute scattered punctures; mesoscutellum punctured on a broad belt along anterior margin of appendage. Abdomen impunctate, subshining. Pubescence brownish yellow.

Male.—Average length, 5.2 mm. Similar to female except malar space 0.2× diameter of front ocellus and inner margins of eyes faintly converging below. Genitalia: Penis valve (Fig. 22) with valviceps almost square, of equal width, truncate at apex, without spines on ventral margin; genital capsule (Fig. 25), similar to *B. okutanii*.

Types.—Cameron (1899) described *B.*

viridipes from a female from Khasia Hills, and (1902) *B. albipes* from a female from "Simla." The types are in The Natural History Museum, London, U.K.

Specimens examined.—INDIA: Sikkim, Chungthang, 1,500 m, 12.5.1995, M.S. Saini (3 ♂); Gangtok, 1,700 m, 13.5.1993, M.S. Saini (4 ♂, 2 ♀); Phodong, 1,600 m, 7.5.1995, M.S. Saini (5 ♂, 2 ♀); Singhik, 1,440 m, 8.5.1995, M.S. Saini (9 ♂, 10 ♀); Sangtam, 900 m, 4.5.1995, M.S. Saini (10 ♂, 1 ♀); Toong, 1,300 m, 10.5.1995, M.S. Saini (4 ♂, 1 ♀); Sikkim, Sangtam, 3,000 ft., May 4, 1995, M.S. Saini; Assam, Kameng, Dirang Dzong, 10-IV-61, 5,300′, F. Schmid (1 ♀); Assam, Kameng, Rupa, 3-IV-61, F. Schmid (1 ♀).

Distribution.—India (Assam, Sikkim).

Variation.—Some males have the hind basitarsus and remaining hind tarsal segments entirely fuscous. The subspecies *albipes* was separated by the black mesopleuron and mandibles and infuscate clypeus and labrum. We follow Malaise (1944) in considering this only a color variation of *B. viridipes.*

Remarks.— *Busarbia viridipes* is similar to *B. santokhi*; see remarks under the latter for separation.

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